Henry Skinner.

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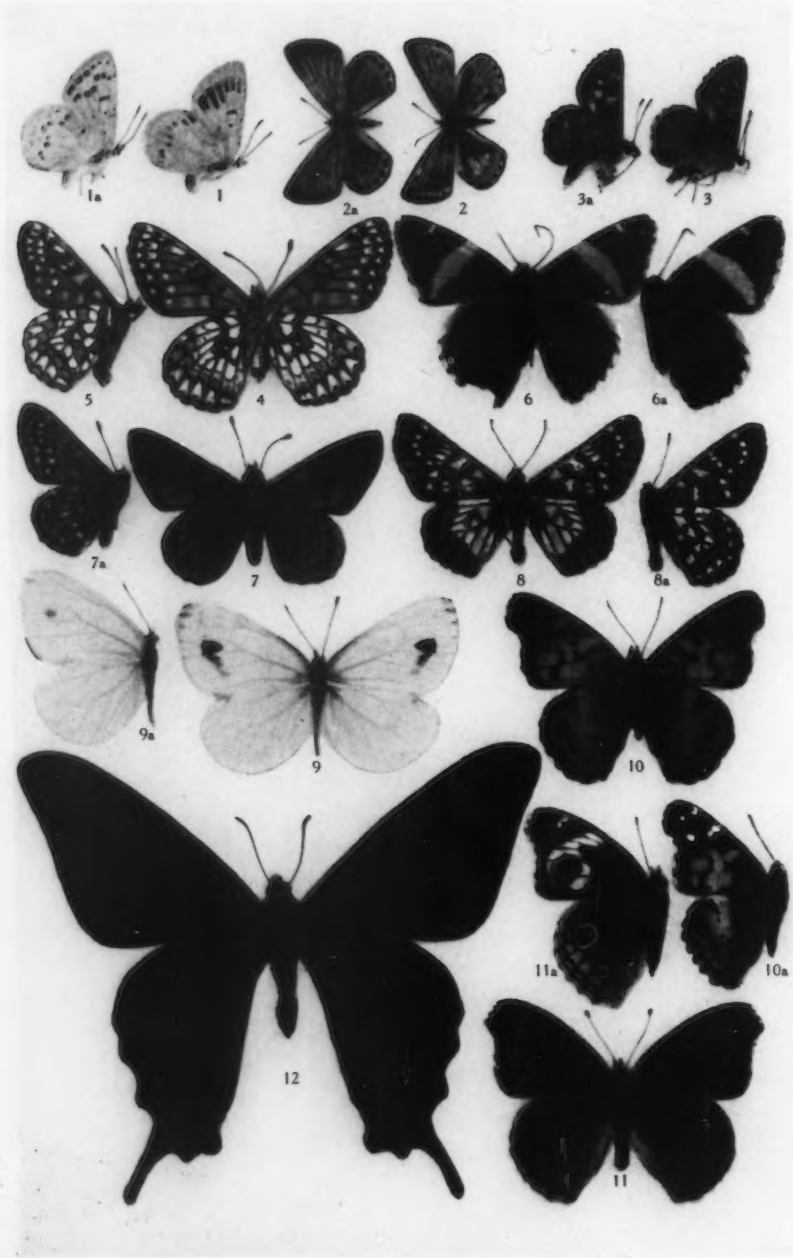

NEW ABERRANT RHOPALOCERA.—GUNDER.

ENTOMOLOGICAL NEWS

VOL. XXXVI JULY, 1925 No. 7

CONTENTS

Gunder—Several New Aberrant Lepidoptera (Rhopalocera) 193
Alexander—Undescribed Species of Crane-Flies from the Eastern United States and Canada (Dipt.: Tipulidae). Part I..... 200
Harris—A New Species of Nabidae (Costa) from the Western United States (Hemiptera)..... 205
Champlain and Knull—A New Species of Lepturges (Cerambycidae, Coleoptera)..... 207
Editorial—A Reminder for Collectors of Insects..... 208
Notice to Authors..... 208
A New Process for Preventing the Ravages of the Clothes Moth (Lepid.: Tineidae)..... 208
An Expedition to Pacific Tropical Amer. 209
Hull—Dipterological Work in South Dakota..... 209
Gunder—Lower California (Mexico) Open to Entomologists..... 211
Cresson—Another Record for the Female of Glutops singularis (Dipt.: Leptidae)..... 211
Felt—New York State Collections of Insects..... 211
Entomological Literature..... 212
Review—Snodgrass on Anatomy and Physiology of the Honeybee..... 219
Doings of Societies—Kansas Entomologists Organize State Society. 221
Obituary—George Charles Griffiths.... 222
Arthur Cant..... 222
Eugene Simon..... 222
Dr. Leopold Melichar..... 224
M. Dyelcho Ilcheff..... 224
M. P. Wytsman and Giovanni Battista Grassi..... 224

Several New Aberrant Lepidoptera (Rhopalocera).

By J. D. GUNDER, Pasadena, California.

(Plate V.)

The time is rapidly approaching when American collectors should take more interest in aberrant Lepidoptera. For the present, we are "busy working over varieties, revising lists, and generally slighting aberrations," as one entomologist recently indicated; but he adds, "the territories of the United States will eventually become limited leaving only forms and aberrations as a source of study"; which is true, for this is the condition now found in England and Continental Europe.

Tucked away in the larger private and museum collections over the country are wonderful and valid, single and duplicate specimens of aberrant rhopalocera which should be gotten out and described, and *what is more important—ILLUSTRATED,* so that our coming students and patient check-list makers will have definite figures to go by in establishing limitations, degrees of variation and possible causes. Colored plates are not really necessary, as clear black and white half-tones serve the purpose just as well; but, by all means, figure new specimens,

ENTOMOLOGICAL NEWS,
ACAD. NAT. SCI.
PHILADELPHIA, PENN'A.

because everyone translates descriptions differently and "types" or their reproductions are still the best and last Court of Appeal. When the species already has a named aberration, be sure that the lines of demarcation in new ones are sufficiently out of range. One should follow precedent in this regard and a study of the existing characteristic variants in the particular genus is necessary. *Van. cardui, Ag. antiopa* and our Western *Euph. chalcedona* make a good basis for study and establish adequate boundaries of description. To date, eight standard aberrations of the last named are figured in J. A. Comstock's "California Butterflies."

I have always considered the so-called uncommon or rarely occurring "color forms," as aberrations and therefore describe them under that term. For example, the yellow *Euphydryas* figured in this paper. Eventually thru the decades, if these become prevalent, they would be moved up a step in rank to the grade of form. Thus under change by evolution (climate, food-plant, etc.) or chance reversional tendency, many aberrations possibly become forms, forms become varieties or races, and races perhaps full species. When more kinds or types of aberrations are found and become known by legitimate and unslighting descriptions, they will be divided into grades and the grades into degrees. This work will be just as important to the student of the future, as is now our proper division of a species.

All figures on this plate have been reduced in size. The colors are fair reproductions.

1. **Heodes heteronia** Bdv. (fig. 1a), ab. ♂ **coloradensis** nov. aberr. (fig. 1).

Upper side. Normal.

Under side. (fig. 1) Primaries: The two submarginal rows of black spots joined in pairs in black thru their respective interspaces. Secondaries: Inner row of black spotting heavier and elongated thru interspaces; otherwise normal. Expanse: 38 mm.

Data: Holotype ♂, (Author's Coll.), Plain View, Colorado. July, 1924.

ENTOMOLOGICAL NEWS
ACAD. NAT. SCI.
PHILADELPHIA, PENNA.

2. **Plebeius monticola** Clem. (fig. 2a), ab. ♀ **malcolmi** nov. aberr. (fig. 2).

Upper side. Primaries: Normal except for a submarginal, narrow border of orange parallel with outer margin, wider at inner angle and indistinct at apex, somewhat similar and comparable to that found on *P. neurona.* Secondaries: Orange band very wide and bright, occupying nearly one-third of outer wing; spotting normal.

Under side. Primaries: Trace of orange between outer margin and first row of black spots. Secondaries: Orange area equally enlarged as on upper side. Expanse: 29 mm.

Data: Holotype ♀, (Author's Coll.), Ridge Route, Los Angeles County, California, May 30, 1922.

Named for Mr. Geo. Malcolm, Los Angeles, California.

Note: Figure 2a is Clemence's "type female," first time illustrated. *P. acmon* is found on the plains and lower hills. *P. monticola* only in the mountains. An intergrade had been noted found flying with *P. chlorina* and *P. neurona* and named form *carolynae.* As yet no intergrade has been found between *P. monticola* and *P. neurona.* If this specimen was a form between these two, it is doubtful if the orange band would be so wide on the secondaries, hence it may be safely termed an aberration.

3. **Atrytonopsis edwardsi** B. & Mc.D. (fig. 3a, under side), ab. ♂ **polingi** nov. aberr. (fig. 3, under side).

The primaries are normal. The secondaries are immaculate with entire lack of spotting on either upper or under side. Expanse: 40 mm.

Data: Holotype ♂, (Author's Coll.) Baboquivari Mountains, Pima County, Arizona, July 22, 1924.

Named for Mr. O. C. Poling.

Note: Normal specimens generally have two rows of spots on the secondaries, occasionally some have only several or an indication, rarely are they immaculate.

4. **Euphydryas chalcedona** Dbly. & Hew., ab. ♀ **omniluteofuscus** nov. aberr. (fig. 4, under side).

All the red shades of both upper and under sides replaced by yellow-brown color; the maculation is normal. Expanse: 47 mm.

Data: Holotype ♀, (Author's Coll.), Santa Monica, Los Angeles County, California, May 30, 1924.

Note: Peculiarity of changed color very similar to ab. *foxi* of *Euph. rubicunda* and ab. *pasadenae* of *Euph. gabbi*. *Euph. chalcedona* is one of the very commonest fliers in California, yet this color aberration is extremely rare in collections as yet.

5. **Euphydryas chalcedona** Dbly. & Hew., ab. ♂ **hemiluteofuscus** nov. aberr. (fig. 5, under side).

Primaries: Normal red color as in typical specimens.

Secondaries: Normal red color replaced by yellow-brown, as in ab. *omniluteofuscus*, described above. Expanse: 45 mm.

Data: Holotype ♂, (Author's Coll.), Altruas, Modoc County, California, May 30, 1924.

Note: Comparably worthy of recognition with ab. *supranigella* and ab. *fusisecunda* in the *chalcedona* group.

6. **Rhabdoides cellus** Bdv. & Lec. (half-fig. 6a), ab. ♂ **aereofuscus** nov. aberr. (fig. 6).

Normal specimens of *cellus* and *pseudocellus* are black or near black. The black on this specimen, including the antennae and body parts, is replaced by bronze-brown. The band of gold across the primaries, costal margin white marks and fringes remain normal. Expanse: 46 mm.

Data: Holotype ♂ (Author's Coll.), Baboquivari Mountains, Pima County, Arizona, July 15, 1924.

Note: I would be glad to hear from collectors of Eastern Hesperiidae regarding Mexican *cellus*, to find out if this is a drift north or not. This specimen is fresh and not faded. The types of *pseudocellus* are in my collection. They are of the same dark color as *cellus*. The bronze color of this specimen does not show up as well as it might on the plate.

7. **Euphydryas anicia** Dbldy. & Hew., var. **capella** Barnes (half-fig. 7a), ab. ♂ **oslari** nov. aberr. (Fig. 7).

Upper side. Normal specimens of *capella* are in three colors —black, red and yellow. In this aberration, there are only two —black and red. A study of its remarkable character reveals the fact that the black has taken over the entire spaces usually devoted to yellow, and at the same time kept its own original maculation. This is especially noticeable around the red cell

spots and the former position of the rows of yellow spots on the secondaries.

Under side. As above, all yellow maculation becomes black instead, with original black and red in unchanged position. Expanse: 42 mm.

Data: Holotype ♂, (Author's Coll.), Platte Canyon, Colorado, July, 1924.

Named for Mr. E. J. Oslar, Denver, Colorado.

8. **Euphydryas sierra** Wright (half-fig. 8a), ab. ♂ **magdelenae** nov. aberr. (fig. 8).

Upper side. Primaries: Row of much elongated red spots in interspaces at outer margin, caused by lack of first submarginal black line found in normal specimens; followed by usual row of yellow spots and crescents in black; yellow and red maculation of discal and basal areas conspicuous for not being bounded with black lines; black veining more noticeable due to lack of transverse black marks. Secondaries: Series of elongated red spots at outer margin as in primaries; however, the elongation extends inward and includes the position occupied by the row of yellow spots which are absent; followed by a complete, well defined row of round red spots partially rimmed in black; interspaces of discal area from costal to inner margins wholly yellow only cut by black of veining and two dashes of red at extremity of cell; normal black area in base.

Under side. Similar degree of change, as above noted, especially near base of secondaries. Expanse: 45 mm.

Data: Holotype ♂, (Author's Coll.), Glen Alpine Creek, El Dorado County, California, May 10, 1921.

Named for Mrs. J. E. Cottle of San Francisco, California, whose ready welcome and kind encouragement are always appreciated by her many West Coast entomological friends.

Note: Ab. *umbrobasana,* as its name indicates, is a more melanic aberration of *sierra,* and several degrees opposite to *magdelenae.* The Author has a splendid specimen of *umbrobasana. Euph. sierra* and *Euph. chalcedona olancha* are the best two *Euphydryas* that Mr. Wright turned up in California.

9. **Pieris napi** L. var. **castoria** Reak. (half-fig. 9a), ab. ♂ **cottlei** nov. aberr. (fig. 9).

Single small black spot on primaries greatly enlarged, filling

interspace and bullet-shaped, pointing inward; trace of suffused spotting in two interspaces directly below, shading out and all connected, making the whole appear like a large "comma mark" on the wing of the specimen. A faint spot is noticeable at costal margin near outer angle on the secondaries. Both sexes of *castoria* in its various spring and summer broods are before the Author. Expanse: 48 mm.

Data: Holotype ♂, (Author's Coll.), Anderson Springs, Lake County, California, May 5, 1919.

Named for Mr. J. E. Cottle, San Francisco, Calif., one of the few remaining older California collectors.

10. **Vanessa virginiensis** Dru. (half-fig. 10a), ab. ♂ **massachusettensis** nov. aberr. (fig. 10).

Upper side. Primaries: Ground color, a deeper brown; all black markings more dense; apical area solid black with all the usual white marks absent; lines along outer margin disappear in a solid black border. Secondaries: As in primaries, the ground color is deeper and the black markings more dense, especially noticeable at outer angle.

Under side. Primaries: Apical area brown-black with no white markings; red area very bright in contrast to the brown-black. Secondaries: Usual clear white designs very faint in a lighter shade of brown.

Head, legs and body parts dark brown, instead of partly white. Expanse: 46 mm.

Data: Holotype ♂, (Author's Coll.), Southampton, Massachusetts, July 20, 1923.

Credit for the capture of this specimen goes to Mr. A. R. Lewis, Jr., Southampton, Massachusetts.

Note: Ab. *fulvia* Dodge, erroneously described as perhaps the early spring form of that locality, is simply a less darkly marked specimen, smaller and paler. Ab. *ahwashee* Fox, proves relationship with *Van. carye muelleri* and *Van. cardui elymi.* Mr. H. S. Sims, in the Entom. News, XXV, p. 33, 1914, notes a female aberration which seems melanic like *massachusettensis.* The absence of white spots makes *massachusettensis* a noteworthy addition to this species.

11. **Junonia coenia** Hbn. (half-fig. 11a), ab. ♀ **schraderi** nov. aberr. (fig. 11).

Upper side. Primaries: Entire wing clouded over with the ground color, completely obliterating lines at outer margin; ocelli areas blurred leaving no trace of design or blue center color as is found in the darkest form *nigrosuffusa;* no white band around ocelli extending to outer margin, but a semblance of lighter shading from ocelli to sex mark; no black borders around the red cell spots as is noticeable in form *nigrosuffusa* and typical *coenia;* basal and cell areas with a darker ground color; in form *nigrosuffusa* there is no blurring of the ocelli on the primaries, they are submerged in appearance, yet distinct in design. Secondaries: Single dark line at base of fringes on outer margin; followed by a narrow, lighter border or series of lunate interspace areas to position of original submarginal lines which are absent, a slightly darker ground color taking their place; both ocelli less sharply defined with no blue color, yet rimming of black in heavy contrast.

Under side. Primaries: No lines at outer margin; apical area clear slate-brown color; ocelli fused and blurred out of recognition; maculation of cell and near cell areas indistinct. Secondaries: All lines indistinct.

This aberration compares favorably with certain illustrations of *Van io* ab. *belisaria* Obthr. by Dr. M. Standfuss. Expanse: 50 mm.

Data: Holotype ♀, (Author's Coll), Los Angeles, California, May 17, 1910.

Named for Mr. Wm. Schrader, Los Angeles, California.

Note: Mr. Schrader has experimented for many years with breeding *J. coenia.* Distortion or lack of ocelli has been the principal results of inbreeding under hot or cold, dry and moist air. He has published several papers. This last year the Author went over some seven thousand *coenia* bred for commercial purposes and found no real aberrations in the lot, aside from joined ocelli, distortions and the like, which goes to show that aberrations in this species are rarely occurring indeed. This specimen is the only aberration which Mr. Schrader produced in years and years of experiment. His object in experimenting with *coenia* was to show cause and effect. The species is easily raised.

12. **Papilio eurymedon** Bdv., form **albanus** Feld., ab. ♂ **cocklei** nov. aberr. (fig. 12).

Upper side. Primaries: Wholly jet black with veins shiny black. Secondaries: Jet black as in primaries, except for row of blue spots, much reduced thru limbal area, only the lower ones showing; the long hairs parallel with inner margin are grey color and contrast with the jet black ground color.

Under side. All maculations of typical specimens are in evidence, the lighter portions being a smoky reddish grey; orange lunules at anal angle wholly obscured; row of blue spots reduced in size and narrow. Expanse: 93 mm.

Data: Holotype ♂, (Author's Coll.) Kaslo, British Columbia, Canada, May 24, 1924.

Named for Mr. J. Wm. Cockle, Kaslo, B. C., Canada.

Note: Southern California *Pap. eurymedon* have cream-white or yellow markings. Those of Northern California, north to Canada and thru the Rockies generally have pure white maculation. These latter, I should judge to be the form *albanus*. They are smaller specimens. I have some in which the black submarginal band extends inward covering nearly one-half the wing, and all white maculation is much reduced.

EXPLANATION OF PLATE V.

The numbers of the figures on this plate correspond to the numbers placed in front of the species in the text.

Undescribed Species of Crane-Flies from the Eastern United States and Canada (Dipt.: Tipulidae). Part I.

By CHARLES P. ALEXANDER, Amherst, Massachusetts.*

The new species of crane-flies described at this time were chiefly included in extensive collections that were sent to me by Professor J. Speed Rogers, head of the Department of Biology, University of Florida at Gainesville, Florida. The flies are described at this time in order to make the names available for the forthcoming state lists by Professor Rogers. I am very greatly indebted to the collector for many favors

* Contribution from the Department of Entomology, Massachusetts Agricultural College.

and kind co-operation in making known the crane-flies of the Eastern United States. The types have been returned to Professor Rogers.

Antocha (Antocha) obtusa sp.n.

General coloration ochreous, the rostrum dark; mesonotal praescutum with a median brown stripe; wings with macrotrichiae on the distal sections of veins $M_1 + _2$ and M_3; male hypopygium with the outer dististyle chitinized, the apex obtuse.

♂. Length about 4.8 mm.; wing 5.5 mm. ♀. Length about 5.2 mm.; wing 6 mm.

Rostrum dark brown, the palpi a trifle paler brown. Antennae dark brown throughout. Head grey, paler posteriorly.

Pronotum yellowish above, darker medially. Mesonotum pale yellowish ochreous, the praescutum with a conspicuous median brown stripe, darkest in front, becoming paler behind and obsolescent before the suture; lateral stripes very indistinct, reddish. Pleura reddish ochreous, in the female very sparsely pruinose. Halteres pale, the knobs a little infuscated.

Legs with the coxae and trochanters testaceous ochreous; remainder of the legs pale brown, gradually darkening outwardly; the tarsi dark brown.

Wings opalescent whitish, the veins brown; prearcular region whitish. Macrotrichiae on distal three-fourths of vein $R_4 + _5$ and on the distal sections of $M_1 + _2$ and M_3 almost throughout their length. Venation: $R_2 + _3$ beneath the stigma very faint, beyond the stigma with about four macrotrichiae.

Abdomen brown, the lateral margins of the segments a little paler, the subterminal segments of the male darkened to form a ring; hypopygium and ovipositor pale. Male hypopygium with the dististyles about equal in length, the outer style chitinized for almost its whole length, bent at about one-third the length, the long, straight terminal portion obtuse at apex. Gonapophyses profoundly bifid as in the genus, the lateral arm a flattened blade, the mesal arm more chitinized apically, slightly expanded before the tip, the apex terminating in a long acute beak, the whole suggesting the head of a bird. Aedeagus distinct.

Habitat.—Michigan, New York, Quebec. *Holotype:* ♂, Ann Arbor, Washtenaw County, Michigan, August 24, 1921 (*J. Speed Rogers*); Coll. No. 12. *Allotopotype,* ♀. *Paratopotypes,* ♂♀. *Paratypes,* 1 ♂, Portage, Wyoming County, New

York, May 24, 1914 (*H. H. Knight*); 2 ♂ 2 ♀, P. Golf Club, Quebec, August 14-25, 1924 (*G. S. Walley*), in Canadian National Collection.

Antocha obtusa is readily told from the other described American species by the obtuse apices of the elongate dististyles of the male hypopygium.

DICRANOTA Zetterstedt and RHAPHIDOLABIS Osten Sacken.

The male genitalia of the various species of *Dicranota*, as well as of the related genus *Rhaphidolabis* Osten Sacken, offer excellent characters for recognition of the species. The ninth tergite has the caudal margin straight across in some species, or with a very low median lobe; this lobe becomes more conspicuous, though low and obtuse, in *R. cayuga* Alexander and species of the subgenus *Plectromyia*, gradually enlarging until, in the *tenuipes* group of *Rhaphidolabis* (*forceps* Alexander, *persimilis* Alexander, *tenuipes* Osten Sacken) it becomes long and slender. The basistyles are relatively stout, and, in most species, bear spines or spinous setae at the slightly produced apices; the ventral face is produced ventrad and mesad into a slender finger-like lobe in *R. persimilis* and a much larger and stouter one in *R. forceps*. The two dististyles are very similar in appearance, the outer one being clavate or cylindrical, fleshy, covered with spines or spinous setae; the inner style assumes various shapes in different species and offers excellent characters for the differentiation of otherwise similar species; in almost all cases this style appears as a more or less flattened blade, the distal portion of which is glabrous and subchitinized.

At the base of the basistyles, on the mesal face, appear two distinct structures that are of prime importance in the differentiation of species, the first being dorsal in position and thus being apparently homologous with the true interbases as defined by Crampton (Trans. Amer. Ent. Soc., 48: 207-225; 1923); these structures, which are here discussed as the *dorsal interbases*, lie immediately ventrad of the caudo-lateral angles of the tergite and appear to arise from pale membrane at this point. In microscopic slides they even appear to arise from the extreme caudo-lateral angles of the ninth tergite but must be considered as being interbasal structures. In the majority of cases they appear as a simple, strongly curved hook, though in a few species (*R. cayuga* Alexander, *R. rubescens* Alexander) they are large claviform blades that exceed in size the ventral interbases. The second set of interbasal processes lie

in a more ventral position at the base of the mesal face of the basistyles and seem to be homologous with the *claspettes* of the Culicidae; in the present paper they are discussed as *ventral interbases* and offer the most convenient and evident structures to be used in the differentiation of species in the *Dicranotae*. In most forms studied they are larger than the dorsal interbases and appear as flattened blades bearing on the face a certain number of small setae; the shape of the blade varies greatly in the different species, in *R. persimilis* and *R. forceps* being deeply bifid or tong-shaped. It should be noted that in some species of *Dicranota* and *Rhaphidolabis*, one or both of the interbasal processes appears to be lacking or at least reduced to a microscopic tubercle. The gonapophyses usually closely subtend the aedeagus, the phallosome appearing as a depressed, compact, subquadrate, central mass, with the lateral angles and the apex of the aedeagus free.

Dicranota divaricata sp.n.

Related to *D. noveboracensis* Alexander, differing chiefly in the structure of the male hypopygium; ventral interbasal process a slender straight rod with the apex obtuse; phallosome quadrate, the gonapophyses directed caudad and laterad as slender divergent horns.

♂. Length 4.5 — 5 mm.; wing 6.3 — 7 mm. Rostrum and palpi dark brown. Antennae short in both sexes, brown throughout, the flagellar segments a trifle paler than the scape. Head clear gray.

Mesonotal praescutum gray with four grayish brown stripes, the long intermediate pair separated from one another by a capillary vitta; scutum gray, the centers of the lobes grayish brown; scutellum light brown; postnotum darker brown, sparsely pruinose. Pleura dark brown, gray pruinose, the dorso-pleural membrane a little brighter. Halteres brownish testaceous, the base of the stem yellowish.

Legs with the coxae brownish gray, paler at tips; trochanters pale yellow; remainder of legs brown, the femoral bases vaguely paler.

Wings with a very pale brown tinge, the slightly darker stigma oval; veins darker brown. Venation: Sc_1 extending to one-third the distance between *r* and the outer deflection of R_2; *Rs* feebly angulated; R_{2+3} a little longer than *r*; outer deflection of R_2 slightly oblique in position, less than its length from the tip of R_{1+2}; distance between *r* and the outer deflection of R_2 greater than the terminal section of R_3 alone; cell M_1 present; *m* absent; *m-cu* about its length beyond the fork of *M*.

Basal abdominal tergites reddish brown, the more distal segments darker; caudal margins of the intermediate segments narrowly and inconspicuously yellowish; sternites similar, the lateral margins paler. Male hypopygium with the basistyles stout; ventral interbasal process a slender, straight rod, the apex obtuse. Phallosome a central quadrate mass, the caudolateral angles with the gonapophyses produced into slender divergent horns, the aedeagus a little longer and stouter, occupying a median position.

Habitat.—North Carolina. *Holotype:* ♂, Guilford College, Guilford County, March 13, 1918 (*J. Speed Rogers*); Coll. No. 31. *Paratopotypes,* 3♂♀, with the type; 1 ♂, March 11, 1918; Coll. No. 30.

Rhaphidolabis (Rhaphidolabis) rogersiana sp.n.

♂. Length about 5.5 mm.; wing 6 — 6.5 mm. ♀. Length 6 mm.; wing 7 mm.

Closely allied to *R.* (*R.*) *cayuga* Alexander, to which species it would run in existant keys.

General coloration dark gray, the mesonotal praescutum with three still darker leaden gray stripes. Wings with a peculiar milky-white tinge, the stigma pale brown; veins darker brown. Venation: Cell R_3 sessile or very short petiolate.

Male hypopygium strikingly different from *R. cayuga.* Median lobe of ninth tergite broad but longer. Produced apex of basistyle with relatively few spines. Dorsal interbases appearing as slender chitinized rods that are bent at a right angle before the tips, the extreme apex deflected into a hawk-like beak. Ventral interbases appearing as long, flattened, simple blades, broad at base, narrowed gradually to the obtuse apex which is microscopically serrulate.

Habitat.—Michigan. *Holotype:* ♂, Gogebic County, August 9, 1920 (*J. Speed Rogers*); Coll. No. 72. *Allotopotype:* ♀, *Paratopotypes:* 2 ♂♂, August 10, 1920; Coll. No. 73; 1 ♀, August 11, 1920; Coll. No. 81.

This interesting crane-fly is named in honor of the collector, Professor James Speed Rogers, who has done much toward making known the crane-flies of Eastern North America.

(To be continued)

A New Species of Nabidae (Costa) from the Western United States (Hemiptera).*

By HALBERT M. HARRIS.

Nabis lovetti, n. sp.

Oblong-ovate, yellowish brown, marked with fuscous or brown, opaque, sparsely pubescent. Head with median stripe widening anteriorly to base of tylus, two broad lateral stripes (interrupted by eyes), and broad ventral stripe (with lighter medial streak) fuscous to black; eyes reddish brown; antennae with a small brown spot on dorsal surface of segment I at about its middle, segment II at apex, and segments III and IV darker; rostrum darkened at apex.

Pronotum with a median stripe on anterior lobe black, lateral stripe on anterior lobe (on either side, seen from above) and seven stripes on posterior lobe brown, the latter sometimes obsolete; pleurites and sternites fuscous to black, bordered with reddish brown. Scutellum yellowish, a central stripe and basal angles darker. Hemelytra opaque, yellowish brown; corium with four dark spots, two on inner (the first somewhat indistinct) and two on outer vein; membrane fusco-testaceous, veins darker. Legs spotted with brown, tending to a tranverse striping on sides of anterior and intermediate femora.

Abdomen above black, lighter at margin and apex; beneath yellowish brown, marked with pale crimson, a broad median stripe and two broad lateral stripes (one on either side bordering connexivum) fuscous to black. Connexivum pale, an interrupted crimson streak beneath.

Head short, broad, its length two and one-half times width at vertex; postocular part narrowed posteriorly, its length equal to distance between ocelli. Eyes large, rounded, length of one slightly less than distance between them. Antennae pubescent, about one-half as long as body, segment I shortest, its length slightly less than that of head in front of ocelli, sharply bent upward at base, thickened and slightly curved outward toward apex; II two-fifths longer than I; III slightly shorter than II; IV slightly shorter than III. Rostrum reaching past anterior coxae, segment I short, thick; II slightly longer than I of antennae; III equal to I of antennae; IV one-half shorter than II.

Pronotum sparsely pubescent, constricted slightly behind the middle, distinctly wider than long, the posterior lobe smooth. Scutellum broader than long. Hemelytra evenly and rather thickly clothed with short recumbent pubescence, the veins prominent. Legs of moderate length; fore femora strongly

* Contribution from the Department of Zoology and Entomology, Iowa State College, Ames, Iowa.

incrassate, densely clothed beneath with short hairs; intermediate femora moderately incrassate, armed beneath with short, outwardly slanting, piceous, spine-like setae and long hairs. Tibiae enlarged slightly at their apices, beset with stiff setae.

Abdomen beneath clothed with short pubescence and long hairs, the latter arising from near the apical margins of the segments. Connexivum sharply set off from abdomen.

♂: Genital segment large, strongly concave laterally, bilobed at apex, bearing on either side underneath a short, stout, pointed, tooth-like tubercle. Clasper with short narrow stem and long, curved, lance-like blade that ends in a sharp, upward-bending point.

♀: Last segment of venter slightly depressed on either side of broad median stripe, median part (as wide as stripe) produced posteriorly, covering base of ovipositor and slightly emarginate. Genital segments short, slightly swollen.

Brachypterous form: Hemelytra reaching scarcely to apex of abdomen; membrane small, elongate, rather sharply rounded at apex, veins prominent. Posterior lobe of pronotum flat. Length: ♂, 7.5 mm., ♀, 7 mm.

Macropterous form: Hemelytra reaching beyond apex of abdomen; membrane large, with three elongate cells. Hamus of wing cell arising from connecting vein. Pronotum larger, broader, slightly emarginate at base, and the posterior lobe arched. Length: ♂, unknown, ♀, 8.8 mm.

Holotype: Brachypterous male, Ingleside, California, Dec. 20, 1920, Henry Dietrich collector, in my collection. *Allotype* and *paratype:* brachypterous females, same label as holotype, in collection of Dr. H. H. Knight. *Morphotype:* macropterous female, Corvallis, Oregon, 1918, Professor A. L. Lovett collector, in my collection. *Paramorphotypes:* macropterous female, same label as morphotype, and macropterous female, Carmel, Monterey County, California, June 27, 1922, in collection of Dr. C. J. Drake and Dr. H. H. Knight.

This species is quite distinct from any hitherto described American Nabid. It has been determined in collections as *Nabis flavomarginatus* var. *vanduzeei* Scholtz from which it differs, however, in its more brownish coloring, pubescent hemelytra, shorter antennae, shorter postocular portion of head, and especially in structure of genital segment of male and female, and copulatory hooks of male. It is named in honor of the late Professor A. L. Lovett who collected the first specimen of the type series.

A New Species of Lepturges (Cerambycidae, Coleoptera).

By A. B. CHAMPLAIN and J. N. KNULL*,
Pennsylvania Bureau of Plant Industry, Harrisburg, Pennsylvania.

In working over material of the genus *Lepturges*, a small specimen unlike any of our described North American species was found, and the description follows.

Lepturges minutus n. sp.

In general form and appearance resembling a very small specimen of *L. signatus* Lec. Color dark umber, clothed with short fusco-cinerous pubescence, brown on the irregular dark markings of elytra.

Head feebly indented between eyes; eyes large, coarsely granulate, distance between eyes on vertex much less than width of eye at widest point, antennae long, over twice the length of insect.

Prothorax wider than long, posteriorly oblique spines strong, located on basal half, similar to *L. signatus* Lec., surface finely punctate, a transverse row of coarse punctures at base.

Scutellum small, not prominent. Elytra fully twice as long as wide, sides parallel, apices rounded, surface punctate, punctures becoming less prominent near apex, each elytron irregularly marked with a dark transverse band at base, a lateral spot midway between this and a transverse band back of middle, and apical transverse band and dark apices.

Femora strongly clavate, prosternum about as wide between coxal cavities as diameter of front tibia at base. Length 2.5 mm.

Holotype, collected at Slidell, Louisiana, July 2, in collection of the authors.

Of the eastern members of the genus, this species resembles *L. signatus* Lec., but is quite distinct with the much larger eyes, narrower distance between eyes on vertex, and wider prosternum.

*Authors' names arranged alphabetically.

ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., JULY, 1925.

A Reminder for Collectors of Insects.

By the time this number of the NEWS reaches our readers, the summer collecting season will have been under way for some weeks. But because a collecting season of some sort is always with us, July is as appropriate as any other month to remind the collector that the value of his specimens is in proportion to the data which he preserves on the *labels accompanying* them. It is always necessary to give this advice to some one. The locality, the date, the time of day, the altitude (if the locality alone does not fix this), the nature of the surroundings (inorganic, plant, animal, depending upon the kind of insect collected), the collector's name—all these are some of the information which a full knowledge of insects demands.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE

Notice to Authors.

The attention of Entomologists throughout the world is called to the fact that, beginning with the Volume for 1922, the preparation of the "Insecta" part of the "Zoological Record," has been undertaken by the Imperial Bureau of Entomology. In order that the Record may be as complete as it is possible to make it, all authors of entomological papers, especially of systematic ones, are requested to send separata of their papers to the Bureau. These are particularly desired in cases where the original journal is one that is not primarily devoted to entomology. All separata should be addressed to:—

The Assistant Director, Imperial Bureau of Entomology, 41, Queen's Gate, London, S. W. 7, England.

A New Process for Preventing the Ravages of the Clothes Moth (Lepid.: Tineidae).

Under this title *The Entomologist* (London) for March, 1925, gives a report of a lecture delivered in that city on January 23, by Mr. J. Craft upon the "Incorporation of Eulan into Woolen Textiles and other Fabrics giving Permanent Protec-

tion against Moth Damage." The discovery of eulan is credited to Dr. Meckbach and the firm of Bayer & Co. *Tinea biselliella* was reared on a large scale for the experiments, the resulting information on its life history and bionomics being published in the *Zeitschr. d. techn. Biol.*, x, 168 pp., 91 figs., 1922. The composition of eulan is not stated, but it is used in either a neutral or an acid solution for moth-proofing cloth prior to or at the same time as the dyeing. A benzene-soluble form of eulan is also marketed by means of which articles may be eulanized when they are cleaned.

An Expedition to Pacific Tropical America.

Professor G. F. Ferris, of the Department of Zoology of Stanford University, will sail from Los Angeles about the middle of July, accompanying a small party on board a private yacht for a year of travel along the west coast of Mexico, Central America and South America. The party will be engaged primarily in geological exploration in Venezuela and Colombia but some time will be spent in Mexico and numerous short stops will be made at Central American ports and along the west coast of South America as far south as Chile. Professor Ferris will devote his time entirely to the collecting of insect material especially in the groups composed of small and obscure forms, such as the Coccidae, Aphidae, Aleyrodidae, Chermidae, the mites and similar types.

For the purposes of the expedition a fifty-five foot auxiliary schooner has been obtained, which the party, consisting of four, will themselves navigate.

Dipterological Work in South Dakota.

The writer was engaged during the summer of 1924 in a faunistic study of the Diptera of South Dakota, under the direction of Prof. H. C. Severin of the Zoology-Entomology department, South Dakota State College. The purpose of this article is merely to indicate some of the interesting preliminary results of a study, a complete report of which is to be made later by that department, and which will be of no little interest to the Dipterists of the country.

This survey was made by auto, in company with Prof. E. C. O'Roke, of that department. The trip extended over about three thousand miles and included all the different areas of the state. The state is peculiarly fortunate in the number of different zones which it exhibits and the variety of conditions presented. As was perhaps to be expected, the subalpine region of the Black Hills, has yielded probably the most in the

way of unusual records and the writer has at hand some ecological observations that should be of considerable importance in connection with these forms.

Due perhaps to the diversity of environments in the state, it was possible to obtain a total of species which compares favorably with the New Jersey list and the recent Oregon list. The approximate number of species amounted to one thousand, and these included fifty-one out of a possible fifty-four families, as based upon the Aldrich catalogue list, and not considering recent family divisions.

Below is appended a tabular account of the different families with the estimated total of species. This estimate, while made by the writer after a cursory though careful examination, is yet a conservative statement.

Estimated Number of Species Found in Each Family:

Tipulidae	38	Syrphidae	85
Dixidae	2	Oestridae	1
Chironomidae	58	Tachinidae	95
Psychodidae	3	Dexiidae	5
Culicidae	6	Sarcophagidae	20
Mycetophilidae	20	Muscidae	18
Itonididae	3	Anthomyidae	102
Bibionidae	4	Scatophagidae	4
Simuliidae	5	Clusiidae	1
Anisopidae	1	Helomyzidae	10
Stratiomyidae	24	Borboridae	11
Tabanidae	15	Sciomyzidae	27
Rhagionidae	6	Sapromyzidae	31
Nemestrinidae	1	Ortalidae	33
Oncodidae	1	Trypaneidae	22
Bombyliidae	26	Micropezidae	8
Therevidae	5	Sepsidae	10
Omphralidae	2	Psilidae	5
Mydaidae	1	Diopsidae	1
Asilidae	43	Ephydridae	18
Dolichopodidae	56	Chloropidae	45
Empididae	31	Conopidae	17
Lonchopteridae	1	Drosophilidae, Geomyzidae	14
Phoridae	4		
Clythiidae	2	Agromyzidae	16
Dorylaidae	10	Total	977 species.

F. M. HULL, Dept. Entomology, Ohio State Univ.
Columbus, Ohio.

Lower California (Mexico) Open to Entomologists.

A good dirt motor road has recently been completed into Lower California south of San Diego. Lower California is practically a new field for Entomologists in all orders. June or early July is perhaps the best time. There is no strict red tape to undergo with the Mexican authorities in crossing the border. The road leads south of San Diego, 86 miles to Ensenada, thence on 120 miles to a Ranch House where meals and accommodation can be had at reasonable prices. Entomologists contemplating visiting California might take this trip under advisement.—J. D. GUNDER, Pasadena, California.

Another Record for the Female of Glutops singularis (Dipt.: Leptidae).

While collecting in a woods along Dismal Run, Delaware County, Pennsylvania, last April 18th, I captured what I thought was a species of the Leptid genus *Symphoromyia* flying near a leaf covered brook. Upon examination in my study a few days later, I found it to be a female of *Glutops singularis* Burgess. This is the second record of the capture of this sex. The few published records of this rare species may be found in C. W. Johnson's article on the record and description of the female (Psyche, xxvii, p. 153, 1920) from which we glean that the species has been found in Massachusetts, New Hampshire, Connecticut, and British Columbia. It would be interesting to hear of other records of this fly.—E. T. CRESSON, JR.

New York State Collections of Insects.

The Erastus Corning collection of Lepidoptera has been transferred to the custody of the New York State Museum by a recent vote of the Executive Committee of the Albany Institute and Historical and Art Society, title of said collection however to remain with the Society. The Corning collection of Lepidoptera comprises somewhat over 4000 specimens, the Sphingidae, the Catocalas, and the Bombycidae being particularly well represented. There are also a number of magnificent, exotic Lepidoptera, mostly Rhopalocera.

This action places a magnificent collection where it will be given suitable care and moreover brings under one roof the work of three early, enthusiastic entomologists, namely, Messrs. J. A. Lintner, W. W. Hill and Erastus Corning, all co-laborers in the latter part of the last century. The Lintner collection is particularly strong in the Noctuidae, though it contains many

other forms collected by Dr. Lintner during the earlier years of his entomological activities. The Hill collection comprises some 10,000 specimens representing over 3000 species, the Nymphalidae, the Lycaenidae, the Hesperidae, the Sphingidae and the Noctuidae being particularly well represented. An account of this last collection and a list of the species is given in N. Y. State Museum Bulletin 124, pages 61 to 117, 1908.

E. P. FELT, Albany, New York.

Entomological Literature

COMPILED BY E. T. CRESSON, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

Papers of systematic nature will be found in the paragraph beginning with (N). Those pertaining to Neotropical species only will be found in paragraphs beginning with (S). Those containing descriptions of new forms are preceeded by an *.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

The titles occurring in the Entomological News are not listed.

4—Canadian Entomologist. **5**—Psyche. **6**—The Entomologist's Monthly Magazine. **9**—The Entomologist. **10**—Proc. Ent. Soc. Washington. **14**—Entomologische Zeit., Frankfurt a.M. **15**—Insecutor Ins. Menstruus. **17**—Ent. Rundschau, Stuttgart. **18**—Internationale Entomolog. Zeit., Guben. **21**—The Entomologist's Record. **22**—Bulletin of Ent. Research. **25**—Bull., Soc. Ent. France. **26**—Ent. Anzeiger, Wien. **33**—Bull. et Annal. Soc. Ent. Belgique. **45**—Zeit. f. Wissenschftl. Insekentb., Berlin. **48**—Wiener Entomol. Zeitung. **50**—Proc. U. S. National Mus. **55**—The Pan-Pacific Entomologist. **58**—Entomolog. Berichten, Holland. **63**—Deutsche Ent. Zeit., "Iris." **64**—Zeit., Oesterr. Ent. Ver., Wien. **68**—Science. **71**—Novitates Zoologicae. **75**—Annals and Mag. of Nat. History, London. **78**—Bulletin Biologique de la France et de la Belgique. **101**—Biolog. Bull., Woods Hole, Mass. **104**—Zeit. f. wissen. Zool., Leipzig. **105**—Proc., Biol. Soc. Washington. **106**—An. Soc. Cien. Argentina. **107**—Biologisches Zentralblatt. **108**—Jour. Washington Acad. Sci. **111**—Archiv. f. Naturg., Berlin. **113**—Jour. Agric. Research, Washington. **126**—Revista Chilena Hist. Nat. **130**—Ohio

Jour. of Sciences. **133**—Jour. Experimental Zool. **141**—Amer. Naturalist. **144**—Ann. Sci. Nat., Zool., Paris. **151**—Oc. Pap., Boston Soc. Nat. Hist. **152**—U. S. Dept. Agric. **153**—Bull., Mus. Nat. Hist. Naturelle, Paris. **154**—Zoolog. Anzeiger.

GENERAL.—Berlese, A.—Gli insetti, Vol. 2, Fasc. 42-61, p. 849—fine vol. ii. **Bristowe, W. S.**—Sound production by insects. (Nature, London, cvx, 640-1.) **Bruhn, S.**—Anschwemmen von insekten am meersstrand. **18,** xix, 22-4. **Clement, H.**—Effluves a haute frequence et la capture des insectes. (Assoc. Franc. Avsn. Sci., Ses. 45, p. 724.) **Cuno, W.**—Erfolge und misserfolge in der raupenzucht. (Buchb. Ent. Zeit., 1924/25, 22-8.) **Descy, A.**—La vie sociale chez les insectes. **144,** viii, 87-104. **Ferris, G. F.**—Content of systematic biology. (Sci. Monthly, xx, 653-8.) **Hepp, A.**—Sammelpraxis in fruheren zeiten. (Buchb. Ent. Zeit. F. a.M., 1924/25, 29-46.) **Houard, C.**—Collection cecidologique du laboratoire entomologique du museum de Paris. (Assoc. Franc. Avan. Sci., Ses. 44, 1920, 304-6.) **Jeffrey, E. C.**—Polyploidy and origin of species. **141,** lix, 209-17. **Kennedy, C. H.**—Distribution of certain insects of reversed behavior. **101,** xlviii, 390-401. **Knoch, V.**—Einige practische winke fur die sammlung. **18,** xix, 38. **Krausse, A.**—"Staat" und "Recht." **18,** xix, 28-9. **Lutz, F. E.**—New insect groups in the American Museum. (Nat. Hist., xxv, 127-35.) **Mortensen, T.**—Some observations on protective mimicry. (Treubia, vi, 207-11.) **Poche, F.**—Zur begrundung dreier antrage zwecks einschrankung der zahl der namensanderungen und Abschaffung des liberum veto in der Internationalen nomenklaturkommission. **111,** A, 6, 75-155. **Porter, C. E.**—Plantas que sirven de trampas a los insectos. **126,** xxvii, 193. **Poulton, E. B.**—Insecta of the Falkland Islands. (The Falkland Islands By V. E. Boyson. Oxford, 1924, p. 362-71.) **Rabaud, E.**—Les phenomenes de convergence en biologie. **78,** Suppl. vii, 1925, 165 pp. **Shreve, F.**—Ecological aspects of the desert of California. (Ecology, vi, 93-103.) **Simon, E.**—Discours prononces aux obeseques de, **153,** 1924, 426-9. **Visher, S. S.**—Tropical cyclones from an ecological viewpoint. (Ecology, vi, 117-22.) **Weiss, H. B.**—Insect food habit ratios on Quelpart Island. **5,** xxxii, 92-4.

ANATOMY, PHYSIOLOGY, MEDICAL, ETC.—Gates, R. R.—Species and chromosomes. **141,** lix, 193-200. **Glaser, R. W.**—Hydrogen ion concentrations in the blood

of insects. (Jour. Gen. Phys., vii, 599-2.) **Goldschmidt, R.**—Problem der geschlechtsbestimmung. (Der Naturf., ii, 57-63, (cont.) **Hering, M.**—Regenerationserscheinungen in minengangen. (Mikrokosm., xviii, 161-6.) **Morgan, Bridges, Sturtevant.**—Genetics of Drosophila. (Bibliogr. Genetica, The Hague, Dec. 2, 1-262.) **Nath, V.**—Cell inclusions in the oogenesis of scorpions. (Proc. R. Soc., London, Ser. B, xcviii, 44-58.) **Ostenfeld, C. H.**—Some remarks on species and chromosomes. **141,** lix, 217-18. **Paillot, A.**—Le probleme de equilibre naturel chez les insectes phytophages. (Rev. Gen. Sci. Pures et Appl., xxxvi, 206-11.) **Peacock, A. D.**—Animal parthenogenesis in relation to chromosomes and species. **141,** lix, 218-24. **Pruthi, H. S.**—Homologies of the genital ducts of insects. (Nature, cxv, 763.) **Richardson, C. H.**—Oviposition response of insects. (U. S. Dep. Agr. Bul. 1324.) **Rosenberg, O.**—Chromosomes and species. **141,** lix, 205-8.

ARACHNIDA AND MYRIOPODA.—Joseph, C.—Moeurs des araignees. **126,** xxvii, 142-4. **Kastner, A.**—Studien zur ernahrung der arachniden. Die nahrungsaufnahme einiger Phalangiden. **154,** lxii, 212-14. **Remy, P.**—Saignee reflexe chez un arachnide, "Argas reflexus." (Assoc. Franc. Avan. Sci., Ses. 45, 664-71.)

(N) ***Chamberlin, R. V.**—The Ethopolidae of America north of Mexico. (Bul. Mus. Comp. Zool., lvii, 385-437.) ***Ferris, G. F.**—On two sps. of the genus Halarachne (Gamasidae). (Parasitol., xvii, 163-7.)

(S) ***Chamberlin, J. C.**—On two sps. of pseudoscorpion from Chile . . . . **126,** xxvii, 185-192. ***Sellnick, M.**—Drei Oribata-arten aux Mexico. (Rev. Mex. Bio. . . . , v, 346-54.) **Silvestri, F.**—Notizia della presenza del genere Synxenus (Myriopoda) in Catalogna. . . . (Treb., Mus. Cien. Nat. Barcelona, iv, No. 5.) ***Snyder, T. E.**—New Cuban termite. **10,** xxvii, 105-6.

THE SMALLER ORDERS OF INSECTA.—Cleveland, L. R.—The feeding habit of termite castes and its relation to their intestinal flagellates. The effects of oxygenation and starvation on the symbiosis between the termite, Termopsis, and its intestinal flagellates. **101,** xlviii, 295-308; 309-26. **Dodds, G. S.**—Ecological studies of aquatic insects. Adaptations of caddisfly larvae to swift streams. (Ecology, vi, 123-37.) **Howe, R. H.**—Another instance of the northward migration of Odonata in the spring. **5,** xxxii,

113. **Snyder, T. E.**—Origin of the castes in termites. **105,** xxxviii, 57-68.

(N) ***Collins, R. L.**—A lower eocene termite from Tennessee. (Am. Jour. Sci., ix, 406-10. **Lestage, J. A.**—Notas trichopt. VIII. Etude du groupe polycentropiden et catal. system. des genres especes decrit depuis 1907 (in Gen. Ins.). **33,** lxv, 93-120.

(S) **Martin, R.**—Sur quelques Odonates dont la presense au Chili. . . . **126,** xxvii, 108-9. ***Navas, L.**—Crisopidos neotropicos. **126,** xxvii, 110-6. ***Snyder, T. E.**—A new Rugitermes from Panama. **108,** xv, 197-200.

ORTHOPTERA.—Bodine, J. H.—Effect of temperature on rate of embryonic development of certain Orthoptera. **133,** xlii, 91-109.) **Criddle, N.**—Field crickets in Manitoba. **4,** lvii, 79-84.

(N) **Hoffmann, C. C.** et al.—Informe de la comision cientifica exploradora de la plaga de la langosta en el estado de Veracruz. (Mon. Inst. Higiene, Mexico, No. 3, 140 pp.)

(S) ***Uvarov, B. P.**—Two new O. from British Guiana. **75,** xv, 680-3.

HEMIPTERA.—Hungerford, H. B.—Notes on the giant water bugs. **5,** xxxii, 88-91. **MacGillavry, D.**—Over brachypterisme bij Gerris. **58,** vi, 346-52. **Riley, C. F. C.**—Some aspects of the general ecology and behavior of the water-strider, Gerris rufoscutellatus. **21,** xxxvii, 65-72. (Cont.) **VanDuzee, E. P.**—Third record for Emphoropsis depressa., p. 155. Luceria tranquilla, p. 185. **55,** i.

(N) ***Ball, E. D.**—Some n. sps. of N. Amer. treehoppers (Membracidae). **108,** xv, 200-5. **Drake & Hottes.**—Five n. sps. and a n. var. of water striders from N. A. (Gerridae). **105,** xxxviii, 69-74. ***Knight, H. H.**—Descr. of a n. gen. and eleven n. sps. of N. Am. Miridae. **4,** lvii, 89-97. Descr. of 14 undescribed sps. of Parthenicus (Miridae). **130,** xxv, 119-29. **Morrison, H.**—Classification of scale insects of the subfamily Ortheziinae. **113,** xxx, 97-160.

(S) **Goding, W.**—Synopsis of the Membracidae of Chile. **126,** xxvii, 118-23. ***Laing, F.**—Descr. of two sps. of Coccidae feeding on roots of coffee. **22,** xv, 383-4. ***Metcalf, Z. P.**—Notes and descr. of the Cercopidae of Cuba. **5,** xxxii, 95-105. ***Porter, C. E.**—Insecto nuevo de la fam. Bertidae, p. 20-1. Una filoxera nueva? p. 25. Sobre el Gerris Chilensis. p. 38. Phrygilanthus y coccidos, p. 107. **126,** xxvii.

LEPIDOPTERA.—Dampf, A.—Estudio morphologico del gusano del maguey (Acentrocneme hesperiaris). (Rev. Mex. Biol., iv, 147-59.) **Dziurzynski, C.**—Melanismus und nigrismus bei Zygaena. **64,** x, 48-50. **Forbes, W. T. M.**—Pectinate antennae in the Geometridae. **5,** xxxii, 106-12. **Giacomelli, E.**—Sobre el significado mimetico de las manchas ocelares . . . en el genero Caligo. **126,** xxvii, 16-19. **Hayward, K. J.**—Migration of butterflies. **9,** 1925, 147-9. **Meyrick, E.**—Wegener's hypothesis and the distribution of micro-lepidoptera. (Nature, cxv, 834-5.) **Schoenichen**—Klassenzimmertechnik beim unterricht in der insektenkunde. (Der Naturf., Berlin, 1925-26, 31-3.) **Schultz, G. M.**—Qualitats—und praparationsfragen. **18,** xix, 30-2. **Titschack, E.**—Untersuchungen uber den temperatureinfluss auf die kleidermotte. (Tineola biselliella.) **104,** cxxiv, 213-251.

(N) **Barnes & Benjamin.**—Addenda to notes on some sps. of L. in relation to the Stretch collection. **55,** i, 164-9. **Robertson, C.**—Note on Panurgidae. **5,** xxxii, 113. **Seitz, A.**—Die grossschmetterlinge der erde. Faun. Amer., Lief. 167-168. Vol. 6, p. 417-48. **Seitz, A.**—Das system der schmetterlinge. **17,** xlii, 18-20 (Cont.).

(S) ***Hoffmann, C. C.**—Lepid. nuevos de Mexico. (Rev. Mex. Biol., iv, p. 69-73, 1924.) ***LeMoult, E.**—Deux races nouvelles de Morpho du bas Orenoque, Venezuela. **25,** 1925, 109-10. ***Prout, L. B.**—Geometrid descript. and notes. **71,** xxxii, 31-69. ***Schawerda, K.**—Eine neue Saturniide aus Columbien. **63,** xxxix, 57-8.

DIPTERA.—Bradley, G. H.—Larva of Aedes thibaulti. (Culicidae). **15,** xiii, 89-91. **MacGregor, M. E.**—Mosquitos under winter conditions. **22,** xv, 357-8. **Rimsky-Korsakow, A. P.**—Einige beobachtungen an zweifluglern aus der gattung Chionea. **45,** xx, 69-76 (Cont.).

(N) ***Aldrich, J. M.**—New Leucopis from San Francisco. **55,** i, 152. ***Cole, F. R.**—Notes on the dipterous family Therevidae. **4,** lvii, 84-8. **Enderlein, G.**—Zur klassifikation der Tabaniden. **154,** lxii, 180-1. ***Enderlein, G.**—Weitere beitrage zur kenntnis der Simuliiden und ihrer verbreitung. **154,** lxii, 210-11. **Frost, S. W.**—A study of the leaf-mining D. of N. Am. (Cornell Univ. Ag. Exp. Sta., Mem. 78.) **Johnson, C. W.**—North Am. varieties of Volucella bombylans. (Syrphidae). **5,** xxxii, 114-11. ***Jordan, K.**—New Siphonaptera. **71,** xxxii, 96-112. ***Malloch, J. R.**—Ameri-

can sps. of the gen. Griphoneura. (Sapromyzidae). **105,** xxxviii, 75-8. ***Shannon, R. C.**—Some Am. Syrphidae. **10,** xxvii, 107-12. ***Shannon, R. C.**—Genus Chalcomyia (Syrphidae). **151,** v, 151-3. ***Spuler, A.**—Studies in No. Am. Borboridae. **4,** lvii, 99-104. ***VanDuzee, M. C.**—Revision of the N. Am. sps. of the genus Argyra. . . . . (Dolichopodidae). **50,** lxvi, Art. 23. ***VanDuzee, M. C.**—Dolichopodids, new or imperfectly known. **55,** i, 153-5.

(S) **Brethes, J.**—Proposito de la mosca Melieria fasciata. **126,** xxvii, 182-4. ***Dyar & Shannon.**—New sabethid mosquito from Panama. (Jour. Wash. Ac. Sc., xv, 234.) **Porter, C. E.**—Lista de los Sirfidos col. por. H. E. Pinochet en la prov. Bio-Bio, Chili. **126,** xxvii, 117. ***Shannon, R. C.**—Extraordinary adult myrmecophile from Panama. **108,** xv, 211-13.

COLEOPTERA.—Champion, G. C.—Metallic colouring of the under surface of the elytra in certain Col. **8,** 1925, 115. **Hamilton, C. C.**—Studies on the morphology, taxonomy and ecology of the larvae of holarctic tiger-beetles. **50,** lxv, Art. 17. **Hoffmann, A.**—Vertikale verbreitung der Caraben und erorterung uber geflugelte Caraben. **26,** v, 57-60. **Korstian, C. F.**—Coincidence between the ranges of forms of western yellow pine, barkbeetle and mistletoe. **68,** lxi, 448. **Schnell, Dr.**—Aus dem leben der russelkafer. **14,** xxxix, 21-2 (Cont.). **Sprett u. Levitt.**—Zur kenntnis des inneren geschlechtsapparates der blattkafer. **48,** xlii, 39-44. **Spruyt, F. J.**—Observations on the egg-laying habits of Saxinis saucia (Chrysomelidae). **55,** i, 1 6-8.

(N) ***Blaisdell, F. E.**—New sp. of Dasytes from Cal. (Melyridae). **55,** i, 184-5. ***Chamberlin, W. J.**—New sp. of Poecilonota from Cal. . . . Buprestidae. **55,** 186-7. ***Fisher, W. S.**—New sp. of Leptostylus from the U. S. (Cerambycidae). **10,** xxvii, 103-5. **Jones & Brisley.**—Field notes concerning a few Arizona Hispinae. **55,** i, 174-5. ***Knaus, W.**—Three new forms of Col. **55,** i, 182-3. **Lesne, P.**—Classification des Col. Xylophages de la famille des Bostrychides. (Assoc. Franc. Avan. Sci., Ses. 44, 1920, 285-9.) **Lasne, P.**—Patrie origine du Trogoxylon aequale (Lyctidae). (Assoc. Franc. Avan. Sci., Ses. 45, 1921, 638-42.) ***Notman, H.**—Synoptic review of the beetles of the tribe Osoriini from the western hemisphere. **50,** lxvii, Art 11. ***Notman, H.**—Rev. of the . . . Pseudo-

morphidae, and a suggestion for a rearrangement of the Adephaga. . . . **50,** lxvii, Art. 14. **Pierce, W. D.**—History of the rhynchophorid genera Rhynchophorus, Calendra, Sphenophorus and Sitophilus. **10,** xxvii, 113-4. ***VanDyke, E. C.**—Notes and descr. of n. sps. of West American Hispinae (Chrysomelidae), p. 170-3. Observations concerning certain C. from the Yosemite Valley, during the summer of 1912, p. 175-6. **55,** i.

(S) ***Achard, J.**—Synopsis des Cosmogramma (Chrysomelidae). **25,** 1925, 82-5. ***Brethes, J.**—Description d'un nouveau Cioidae du Chili, p. 29-30. Description de deux nouv. Col. du Chili. Reñabilitation d'une esp. Latreillienne. p. 39-43. **126,** xxvii. ***Bruch, C.**—Algunos Col. de la Tierra del Fuego. **106,** xcviii, 231-40. ***Pic, M.**—Melanges exotico-entomologiques. Fasc. 43. **Porter, C. E.**—Dos longicornios raros o poco conocidos, p. 52-3. Nueva contribucion a nuestro estudio sobre pelos traqueales de los longicornios. p. 97-8. **126,** xxvii.

HYMENOPTERA.—Andrews, E. A.—Growth of ant mounds. **5,** xxxii, 75-87. **Lundie, A. E.**—Flight activities of the honeybee. **152,** Bul. 1328. **Staeger, R.**—Studien am ameisenlowen. **107,** xlv, 65-93.

(N) ***Cockerell, T. D. A.**—Bees of the gen. Coelioxys in the Coll. Cal. Ad. Sc., p. 145-51. Some bees collected by P. H. Timberlake at Riverside, Cal., p. 179-80. Some parasitic bees of the Pacific coast region, p. 180-1. **55,** i. ***Fouts, R. M.**—New serphoid parasites from the U. S. **10,** xxvii, 93-103. ***Muesebeck, C. F. W.**—Revision of the parasitic wasps of the genus Microbracon . . . north of Mexico. **50,** lxvii, Art. 8. ***Rohwer, S. A.**—Descr. of a new sawfly injurious to jack pine. **10,** xxvii, 115-6. **Viereck, H. L.**—Some synonymy in the Ichneumonidae. **4,** lvii, 104.

(S) ***Brethes, J.**—Un nouveau Spilochalcis du Chili, p. 81. Sur quelques Hym. du Chili, p. 124-8. **126,** xxvii. ***Herbst, P.**—Nuevas avispas antofilas Chilenas (Apidae), **126,** xxvii, 73-80. **Ruiz, F.**—Los himenopteros del cerro San Cristobal. **126,** xxvii, 99-106.

SPECIAL NOTICES.

Bibionidae and Scatopsidae (Diptera), Synopsis of British. By F. W. Edwards. **Ann.** of Appl. Biol., xii, p. 263-75. This paper is here noted as of possible interest to American students of these families. **Catalogue of Scientific** papers, 1884-1900. Compiled by the Royal society of London. Vol. xix. T-Z. This volume completes this catalogue to the

end of the year 1900. **Opuscula braconologica.** Von. J. Fahringer. This is a new serial of which the first volume will treat of this hymenopterous family of the Palaearctic Region. Published by Fritz Wagner, Vienna. Lief. 1, has 60 pp., 1 pl. **Zoological Record,** Vol. 60, 1923, Insecta has just appeared. Price 15 sh. from the Zool. Soc. of London.

Those looking for biographical and obituary notices of North American entomologists will find much information in **A Bibliography of American Natural History,** The Pioneer Century, 1769-1865. By Max Meisel. (The Premier Publishing Co., 626 Broadway, Brooklyn, N. Y., 1924.) One section of this book of 244 pages is entitled "A selected bibliography of the biographies and bibliographies of the principal American naturalists of the pioneer century and of colonial times." The names of the "principal American naturalists" are arranged alphabetically and include some thirty-four entomologists from John Abbot to Benjamin Dann Walsh. After each name are given the years of birth and of death, and below are references to one or more accounts of his life, lists of his writings, etc. Among these "principal naturalists," one finds some names whose rights to be included are, to say the least, questionable, while not a few have been undeservedly omitted. On page 112, in the "Classified subject index to the annotated bibliography," references to articles on the history of American entomology are given. Mr. Meisel's book is unquestionably very useful.

ANATOMY AND PHYSIOLOGY OF THE HONEYBEE. By R. E. SNODGRASS, United States Bureau of Entomology. First Edition. New York, McGraw-Hill Book Company, 1925. Pages i-xvi, 1-327, and 108 text-figures.

This book presents in better and enlarged form much of the subject matter previously published by the author as Technical Bulletin 18 of the United States Bureau of Entomology. Since the appearance in 1910 of this earlier paper on the anatomy of the honeybee by Snodgrass, our knowledge of this insect has increased considerably and a few of the older notions have fallen by the wayside. This newer knowledge governs to a large extent the author's presentation of his subject.

A commendable feature of the book is the author's open-mindedness in regard to terminology and his unbiased treatment of contemporary writings. Because of the large number of technical terms necessarily used in this book, a few more

to aid the special student might have been included without unduly complicating matters. For instance, on page 17, in describing the arms of the tentorium and their points of origin or invagination, certain technical terms existing in the literature are not mentioned. Such important landmarks of certain sclerites are as, or even more, deserving of definite recognition as are certain other anatomical features to which concise names are applied. Again, by the use of published terms such long combinations as "anterior notal wing process" might be avoided. At least, to be consistent with certain other parts of the book and to make it better adapted for general reference, the alternative terms should have been mentioned.

The writer's style, plainness and accuracy of statement bring an otherwise highly technical book within the reach of the average apiculturist. Here and there one finds a few statements open to criticism. On page 4, in speaking of the abdomen in general, the author does not distinguish between the workers and the males. It seems to the reviewer that such a differentiation is advisable at this place even though a detailed discussion is given in Chapter IV. The reason assigned for the use of the term *alitrunk*, on page 64, covers up the real significance of this term. The term *alitrunk* has been generally restricted to those insects having the first abdominal segment united with the thoracic segments, as in the case of the honeybee. The manner in which it is explained, however, creates the impression that it is a term applicable to all pterygote insects.

A very good résumé of the literature concerning the vital phenomena manifested by honeybees is given. The weakness of our knowledge of the physiology of insects is reflected by the fact that the author is unable to draw satisfactory conclusions from some of the subjects which are discussed. Evidently, this doubtfulness concerning some of our most commonly accepted hypotheses so impresses the author that he writes that honeybees "perhaps distinguish the colors and in a vague way the shapes of different objects." The evidence in this case, however, is sufficient to justify a stronger statement. The conclusion on page 107 that from "an anatomical standpoint, then, it would seem that bees must be deaf" may be correct, but judging from a recent note in the *American Bee Journal* for April, 1925, it is almost time for the anatomist to "look again."

The general makeup of the book is of the best and scarcely any typographical errors are in evidence to distract the

thoughts of the reader. On page 85 the text refers to a figure of *Sirex flavescens* and the figure is labeled *Sirex flavicornis*, the latter name probably being the specific name intended in the text. The large number of excellent original illustrations, used as text-figures, are a commendable feature of the book and they attest to the ability of the author as an illustrator. A book such as this, intended for the use of the practical bee-keeper as well as the entomologist, would be a failure without them.

The *Anatomy and Physiology of the Honeybee* by Snodgrass is undoubtedly the best book concerning bees of its kind in any language, and it will so remain until a great deal of new and assiduous research is done, particularly in the field of insect physiology.—THEODORE H. FRISON, Illinois Natural History Survey, Urbana, Illinois.

Doings of Societies.

Kansas Entomologists Organize State Society.

The newest scientific organization in Kansas, the Kansas Entomological Society, was formed at a meeting of entomologists at the Kansas State Agricultural college recently. Dr. Paul B. Lawson, Lawrence, was elected president of the society and Prof. J. W. McColloch, Manhattan, was named secretary. The scientists present at the organization meeting were the guests of the Popenoe Entomological Club of the college.

A committee of the association was appointed to compile a check list of insects of Kansas. Warren Knaus, of McPherson, who brought up the proposition, R. W. Beamer, Lawrence, and H. R. Bryson, Manhattan, will begin the work on the list. From five to ten years will be required to bring the project to completion. The list will form a catalog of all insects which occur in the state, giving distribution in Kansas, biological notes, habits, whether injurious or beneficial and other facts of value to scientists.

The Kansas Entomological Society will hold its meetings annually in connection with those of the Kansas Academy of Science.

The program of the all-day meeting here included, besides the organization and business meeting of the society, an inspection of the experimental work of the K. S. A. C. department of entomology and an informal program. (From The Kansas Industrialist, Manhattan, Kansas, May 13, 1925.)

OBITUARY.

GEORGE CHARLES GRIFFITHS, of Bristol, England, born 1852, died December 2, 1924, carried out a series of observations resulting in a paper *Experiments upon the Colour-relation between the Pupae of Pieris rapae and their Immediate Surroundings Described and Summarized by William White, F.E.S.*, read March 7, 1888, and printed in the *Transactions of the Entomological Society of London.* His paper *On the Frenulum of Lepidoptera,* published in the same *Transactions* for 1898 was followed by further investigations into this organ, the results appearing in Tutt's *British Lepidoptera,* vols. ii, iii and v. (Entom., London, March, 1925.)

ARTHUR CANT, who died at Knowle Hill, Virginia Water, England, December 27, 1924, in his sixty-first year, was an expert in "setting" insects and similar manipulative work, acquiring a skill which has seldom been surpassed. His early work was done for H. J. Elwes and J. H. Leech. Subsequently he was employed by the late F. D. Godman for upwards of thirty years. In January, 1916, he was placed in charge of the setting room at the British Museum of Natural History, remaining there until February, 1924, when ill-health compelled him to cease work completely. (Entom., March, 1925.)

EUGENE SIMON, the well-known French arachnologist, died November 16, 1924. L. Berland gives an interesting sketch of his life, accompanied by a portrait, in the *Annales* of the Entomological Society of France for 1925, first *trimestre,* from which we take the following.

Simon was born at Paris April 30, 1848, son of a physician who did not practice. He early became interested in the Arachnids. "Of an astonishing precocity, he made his debut by a synthetic work of wide scope and in 1864, hardly sixteen years of age, he published the first edition of his *Histoire des Araignées.* . . . From this moment he sketched the precise plan of his scientific life: to make a double synthesis—one consecrated to spiders in general, the other to the arachnids of France. From that time all his activity was concentrated on researches on these two objectives, all his works led to them."

To obtain the necessary material he went to Sicily (1864), Spain (1865, 68), Corsica (1869), Morocco, Tunis, Algeria (1875), interspersed with numerous excursions in France,

Venezuela (1887-8), Suez and Aden (1889-90), the Philippines (1890), Ceylon (1892) and South Africa (1893). In the meantime volumes 1 to 5 and 7 of his *Les Arachnides de France* appeared from 1874 to 1884, but the sixth volume, presenting a new classification of spiders was held back until 1914 and then published only in part; the remainder was confided by Simon before his death to MM. Fage and Berland. This delay was partly due to the publication of the second edition of his *Histoire Naturelle des Araignées* in eight installments between 1892 and 1903. Besides these two main works, Simon published many papers on Arachnids between 1866 and 1923; the list of them occupies 21 pages of the *Annales*. He published also on Crustacea and, in 1921, a monograph on Humming Birds.

"He was, moreover, an ardent collector and his works repose on abundant material, the greater part of which he had collected himself. His collection, the richest in Arachnids which has ever been brought together, has been for some years in the Natural History Museum at Paris. To give an idea of its importance it will suffice to say that having numbered his tubes from the beginning, Eugene Simon had, at the end of his life, passed 26,000. As certain species are to be counted in hundreds, this collection must contain several millions of Arachnids. Eugene Simon never threw away a spider even if common and, for example, he carried his conscientiousness and care so far as to collect each year several *Epeira diadema*, that banality above all others, in order to always have some fresh specimens. . . .

"He was served by a prodigious, clear and never-failing memory. He never appealed to it in vain; the information which he sought, or that was solicited from him, came at once and, one might say, almost automatically. He recalled all the details of the hundreds of excursions he had made and he had an almost individual memory of the millions and millions of spiders which had passed through his hands. I recall my astonishment one day when I spoke to him of a certain spider, a *Scytodes;* his reply was immediate: 'I remember it very well, I took it at such a place in a little village near Aden,' and he gave me a detailed description of it. For more than twenty years he certainly had not had occasion to recall this spider, a single specimen lost among so many others."

Simon was a man of incomparable modesty and simplicity. His conversation was a charm. It was a pleasure to make an excursion with him. "All those who had the honor to

approach him will preserve a touching remembrance of the calm Villa Said, where, behind his work table, accompanied by his inseparable pipe, the *savant arachnologiste* always reserved for them so affectionate a greeting."

DR. LEOPOLD MELICHAR died at Brno (Brünn), Czecho-Slovakia, September 2, 1924. He was born in the same city in 1856, took the M.D. degree at Prague and entered the Sanitary Service of the Austrian Ministry of the Interior at Vienna. As an avocation he studied the Homoptera and was the author of *Cicadinen von Mittel-Europa* (1896), *Homopteren Fauna of Ceylon* (1903) and monographs of the following Fulgoroidea of the world: Ricaniidae (1898), Acanaloniidae and Flatidae (1901-02), Issidae (1906), Dictyopharidae (1912), Tropiduchidae (1914), Lophopidae (1915), and a revision of the first three of these families as the 182nd fascicule of Wytsman's *Genera Insectorum* (1923). "A few months before his death Dr. Melichar had finished a great monograph of the Cicadellinae (Tettigoniellinae) with 154 genera and it is probable that this will be published during the next three or four years in the 'Ann. Mus. Nat. Hungarici'" (W. E. C. in Ent. Mo. Mag., Nov. 1924).

M. DYELCHO ILCHEFF, who was killed by the gang of assassins who recently attacked King Boris of Bulgaria, was a keen and active entomologist, possessing a thorough knowledge of the Macedonian and Bulgarian Lepidoptera derived not only from study in the Royal Entomological Station in Sofia of which he was head, but also from active work in the field. He contributed a number of faunistic papers to the Proceedings of the Bulgarian Natural History Society and of the Bulgarian Scientific Society. He was a keen explorer of faunistically little known regions, and frequently accompanied King Boris, who is himself an accomplished naturalist and botanist, on collecting tours; indeed his murder took place while he was accompanying the King on a collecting trip near Sofia. (P. P. Graves in The Entom., May, 1925.)

The deaths of M. P. WYTSMAN, editor and publisher of the *Genera Insectorum*, at Tervueren, Belgium, on March 1, 1925, and of GIOVANNI BATTISTA GRASSI, director of the institute of comparative anatomy in the University of Rome, member of the Italian Senate, noted for his experiments on the control and prevention of malaria, on May 5, 1925, have been announced.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted—Canadian Entomol, Vol. 2 (1869) to 8 (1876); Vol. 17 (1885), Nos. 5, 9; Vol. 18 (1886), No. 3; Amer. Entomologist, Vol. 1 to 3 (1868-1880); Zoe, Vol. 5, No. 12; Proc. Ent. Soc. Washington, Vol 1 (1899) to 5 (1903); all in exchange for **Cetonides** and **Longicorns** from New Guinea or other countries. Also entomol. literature could be given. Address, Deutsches Entomol. Institut, (Walther Horn), Gossler Str. 20, Berlin-Dahlem, Germany.

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Will send volumes XXV (1921) and XXVII (1923), Revista Chilena de Historia Natural, in exchange for School Entomology by Sanderson & Peairs and Classbook of Economic Entomology by Wm. Lochhead (latest editions) sent to me by registered mail. Will give vol. XXXV also for a copy of American Insects by V. L. Kellogg (last edition) sent registered. Prof. Dr. C. E. Porter, Casilla 2974, Santiago, Chile.

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DIPTERA.

860.—**Van Duzee** (M. C.).—The dipterous genus Syntormon in North America. (Dolichopodidae). (Trans., **50**, 275-287, 1925) ..... .25

LEPIDOPTERA.

863.—**Coolidge** (K. R.).—Life history studies of some Californian Rhopalocera. (Trans., **50**, 319-335, 1925) ..... .35

ODONATA.

861.—**Lamb**, (L.).—A tabular account of the differences between the earlier instars of Pantala flavescens. (Trans., **50**, 289-312, 1 pl., 1925) ..... .50

ORTHOPTERA.

859.—**Hebard** (M.).—A revision of the genus Taeniopoda (Acrididae, Cyrtacanthacrinae). (Trans., **50**, 253-274, 1925) .45

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